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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,208	11/19/2001	Kazuyuki Ohhashi	P21699	8111
7055	7590	02/04/2005	EXAMINER	
GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191			TALAPATRA, ANIKA F	
			ART UNIT	PAPER NUMBER
			2631	

DATE MAILED: 02/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/988,208

Applicant(s)

OHASHI, KAZUYUKI

Examiner

Anika F. Talapatra

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-12 is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09988208.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/19/2002</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

I. The following documents in the information disclosure statement (IDS) filed on 19 November 2001 have not been considered, because no English language translation was provided of these documents:

- i. JP-10-336151;
- ii. JP-7-202959;
- iii. JP-6-224953; and
- iv. JP-6-224952.

The IDS submitted on 19 November 2001 was filed after the mailing date of the 19 November 2001. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, and 4 rejected under 35 U.S.C. 102(b) as being anticipated by Waugh et al. (U.S. Patent 5400363) (hereafter referred to as Waugh).

As to claim 1, Waugh teaches a method for giving a data input signal a phase offset, $\theta=90x+y$: $x = 0, +1, +2, \dots, 0 < y < 90$, by first giving a phase offset in a multiple of 90, and then carrying out a phase shift calculation to give the signal a phase offset with a rotation smaller than 90. Waugh teaches phase offset calculation for the in-phase, I, and quadrature phase, Q, of an input signal. The Q signal pathway will be described. The Q signal is first multiplied by a -180 carrier reference signal producing a signal which has a phase offset of a multiple of 90 (column 4 lines 32-57). Other multiple of 90 values may be used. This is functionally equivalent to a sign inversion circuit, as taught by the applicant. Then, a summer provides for a subtraction of a signal outputted from one multiplier from a signal outputted by another multiplier to form a difference signal which is to be filtered by a filter and applied as an offset control signal to a adjustable phase offset unit, thereby generating a phase offset value to be provided to the signal Q via a multiplier (column 5 lines 3-40). The amount of phase offset provided is controlled by the magnitude of the offset control signal. For example a phase offset of 30 can be generated. The I signal is provided a phase offset in an alternate pathway (column 6 line 31- column 7 line 51). Hence, a output signal is produced with a phase offset of $\theta=90x+y$: $x = 0, +1, +2, \dots, 0 < y < 90$, by the method taught by Waugh.

As to claim 3, Waugh teaches a phase offset circuit for giving a data input signal a phase offset, $\theta=90x+y$: $x = 0, +1, +2, \dots, 0 < y < 90$, by first giving a phase offset in a multiple of 90, and then carrying out a phase shift calculation to give the signal a phase offset with a rotation smaller than 90. Waugh teaches phase offset calculation for the in-phase, I, and quadrature phase, Q, of an input signal. The Q signal pathway will be described. The Q signal (figure 1, 24) is first multiplied (figure 1, 34) by a -180 carrier reference signal (figure 1, 60, port 4) producing a signal which has a phase offset of a multiple of 90 (column 4 lines 32-57). Other multiple of 90 values may be used. This is functionally equivalent to a sign inversion circuit, as taught by the applicant. Then, a summer (figure 1, 48) provides for a subtraction of a signal outputted from one multiplier (figure 1, 36) from a signal outputted by another multiplier (figure 1, 28) to form a difference signal which is to be filtered by a filter (figure 1, 50) and applied as an offset control signal to a adjustable phase offset unit (figure 1, 16), thereby generating a phase

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offset value to be provided to the signal Q via a multiplier (figure 1, 34) (column 5 lines 3-40). The amount of phase offset provided is controlled by the magnitude of the offset control signal (figure 1, offset control, port 70). For example a phase offset of 30 can be generated (column 6 lines 5-22). The I signal is provided a phase offset in an alternate pathway (column 6 line 31- column 7 line 51). Hence, a output signal is produced (figure 1, 58, DEMOD OUTPUT) with a phase offset of $\theta = 90x + y$: $x = 0, +1, +2, \dots, 0 < y < 90$, by the method taught by Waugh.

As to claim 4, Waugh teaches a fixed phase offset that gives the input a fixed phase offset controlled by a control signal line, offset control, connected to the adjustable phase offset unit at node 70 (column 5, lines 15-30, figure 1, 70).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 2 rejected under 35 U.S.C. 103(a) as being unpatentable over Waugh further in view of Linguet (U.S. Patent 5658272) (hereafter referred to as Linguet). Waugh teaches a phase offset calculation method according to the method claimed by the applicant in claim 1. Waugh fails to teach not only the phase of a signal but also the amplitude is adjusted after the signal sign has been inverted. Linguet teaches a signal has its sign inverted and then is amplified, in order to produce an amplitude-modulated signal

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(Linguet, column 4, lines 14-24, figure 4, 9 and 2, claim 1). Therefore, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the method taught by Waugh, by adjusting the amplitude of the signal after the signal sign has been inverted, in order to obtain an amplitude-modulated signal.

Allowable Subject Matter

4. Claims 5, 6, 7, 8, 9, 10, 11, and 12 allowed. The following is an examiner's statement of reasons for allowance: A comprehensive search of prior art failed to teach, either alone or in combination, a method for giving signed binary data a phase offset comprising a sign inversion circuit that gives a phase offset of a multiple of 90 degrees, followed by an amplitude adjustment circuit that adjusts the amplitude of the signal output from said sign inversion circuit, and a phase sift circuit that gives the signal output from said amplitude adjustment circuit a phase offset of less than 90 degrees. Specifically, Linguet taught a signal sign inversion followed by an amplifier, but failed to teach a phase offset of less than 90 degrees following the amplifier; and Waugh taught a signal sign inversion followed by a phase offset of less than 90 degrees, but failed to teach an amplifier following the sign inversion.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:


- i. U.S. Patent 5159435, Holmbo et al., figures 2 and 6;
- ii. U.S. Patent 5293408, Takahashi et al.;
- iii. U.S. Patent 4468784, Jagnow et al.;
- iv. U.S. Patent 4868428, Cooper, figure 3a;
- v. U.S. Patent 5933453, Lewison, figure 5; and
- vi. U.S. Patent 6192225, Arapia et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anika F. Talapatra whose telephone number is 571-272-6039. The examiner can normally be reached Monday to Friday, 08:00-16:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A.T.


KEVIN BURD
PRIMARY EXAMINER